VMC Vidyamandir Classes SINCE 1986

IIT JEE | MEDICAL | FOUNDATION

Class-IX SCIENCE

Half Yearly Paper Online Marks-80

- This question paper contains of 38 questions. All questions are compulsory.
- This question paper divided into four sections-A, B, C and D.
- Section A contains 20 questions (Q No. 1 to 17) of 1 marks each. Q. 18 to 20 Assertion & Reason based question.
- Section B contains 6 questions (Q No. 21 to 26) of 2 marks each.
- Section C contains 6 questions (Q No. 27 to 32) of 3 marks each.
- Section D contains 6 questions (Q No. 33 to 38) of 5 marks each.

SECTION - A

1. Area under v-t graph represents a physical quantity which has the unit

(A) m^2 **(B)** m **(C)** m^5 **(D)** ms^{-1}

2. According to the third law of motion, action and reaction:

(A) Always act on the same body

(B) Always act on different bodies in opposite directions

(C) Have same magnitude and direction

(D) Act on either body at normal to each other

3. The inertia of an object tends to cause the object

(A) To increase its speed

(B) To decrease its speed

(C) To resist any change in its state of *n* motion

(D) To decelerate due to friction

4. A boy is whirling a stone tied with a string in a horizontal circular path. If the string breaks, the stone

(A) Will continue to move in the circular path

(B) Will move along a straight line towards the centre of the circular path

(C) Will move along a straight line tangential to the circular path

(D) Will move alonga straight line perpendicular to the circular path away from the boy.

5. The force of attraction between two unit point masses separated by a unit distance is called:

(A) Gravitational potential

(B) Acceleration due to gravity

(C) Gravitational field

(D) Universal constant

6. An object weighs 10 N in air. When immersed fully in water, it weighs only 8 N. The weight of the liquid displaced by the object will be:

(A) **2N** **(B)** 8 N **(C)** 10N **(D)** 12 N

7. Which condition out of the following increase the rate of evaporation of water?

(A) Decreasing the exposed surface area of water

(B) Adding common salt to water

(C) Decreasing the temperature of water

(D) Increasing the surface of water.

8. A few substance are arranged in increasing order of ‘forces of attraction’ between their particles. Which of the following represent correct arrangement.

(A) Water < air < wind **(B)** Air < Sugar < oil

(C) Oxygen < Water < Sugar **(D)** Salt < juice < air

9. Choose the correct statement of following?

(A) conversion of solid into vapors without the liquid state is called vaporization.

(B) conversion of solid into liquid is called sublimation

(C) Conversion of liquid into gas is called vaporization

(D) Conversion of vapors into solid is without passing through the liquid state is called freezing

10. Which of the following is a chemical change.

(A) Decaying of wood

(B) Hammering a nail into wood

(C) Sawing of a wood

(D) Chopping of a wood

11. Tincture of iodine has antiseptic properties. This solution is made by dissolving.

(A) Iodine in potassium iodide

(B) Iodine in water

(C) Iodine in alcohol

(D) Iodine in vaseline

12. Detoxification of drugs takes place in:

(A) lysosomes

(B) smooth endoplasmic reticulum

(C) vacuoles

(D) rough endoplasmic reticulum

13. The proteins and lipids essential for forming cell membrane are manufactured by:

(A) Endoplasmic reticulum

(B) Golgi bodies

(C) Plasma membrane

(D) Mitochondria

14. Trees with fine needle like leaves are usually found in hilly areas. They are called:

(A) Bryophyte

(B) Algae

(C) Gymnosperm

(D) Angiosperm

15. Name the part of neuron which carries impulses from cyton.

(A) Axon

(B) Cell body

(C) Dendrites

(D) All of these

16. Cardiac muscle is made of branched fibers that are:

(A) Non-straited and under voluntary control

(B) Straited and not under voluntary control

(C) Non-straited and not under voluntary control

(D) Straited and under voluntary control

17. Organelle other than nucleus, containing DNA is

(A) Endoplasmic reticulum

(B) Golgi apparatus

(C) Mitochondria

(D) Lysosomes

18. **Assertion:** If a balanced force is applied on a wooden block it will move.

Reason: Unbalanced force changes the state of motion or rest while balanced force does not.

(A) Both Assertion (A) and reason (R) are correct, and Reason is the correct explanation of assertion (A)

(B) Both assertion (A) and reason (R) and true, but reason (R) is not correct explanation of assertion (A)

(C) Assertion is true, but reason is false

(D) Assertion is false, but reason is true

19. **Assertion:** We prefer to wear cotton clothes during summer.

Reason: Cotton clothes are good absorber of water.

(A) Both Assertion (A) and reason (R) are correct, and Reason is the correct explanation of assertion (A)

(B) Both assertion (A) and reason (R) and true, but reason (R) is not correct explanation of assertion (A)

(C) Assertion is true, but reason is false

(D) Assertion is false, but reason is true

20. **Assertion**: The cells non-striated muscle or smooth muscles are spindle-shaped, unnucleated, elongated and have no striations.

Reason: They are found within the walls of elementary canal, bladder, and blood vessels.

(A) Both Assertion (A) and reason (R) are correct, and Reason is the correct explanation of assertion (A)

(B) Both assertion (A) and reason (R) and true, but reason (R) is not correct explanation of assertion (A)

(C) Assertion is true, but reason is false

(D) Assertion is false, but reason is true

SECTION - B

21. A bridge is 500 m long. A 100 m long train crosses the bridge at a speed of 30 m/s. Find the time taken by train to cros it.

22. The weight of any person on the Moon is about 1/6 times that on the Earth. He can lift a mass of 15 kg on the Earth. What will be the maximum mass, which can be lifted by the same force applied by the person on the Moon?

23. Give Reasons

(i) A gas completely fills the vessels in which it is kept.

(ii) A gas exerts pressure on the walls of container.

24. List any two characteristic of colloids?

25. Identity the type of tissue present in the following:

(a) Skin

(b) Lining of kidney tubule

(c) Bone

(d) Vascular bundle

26. What happens to an animal cell when it is placed in a very dilute external medium. Why?

SECTION-C

27. Define latent heat of vaporization? Which will cause more severe burn steam or boiling water? and why?

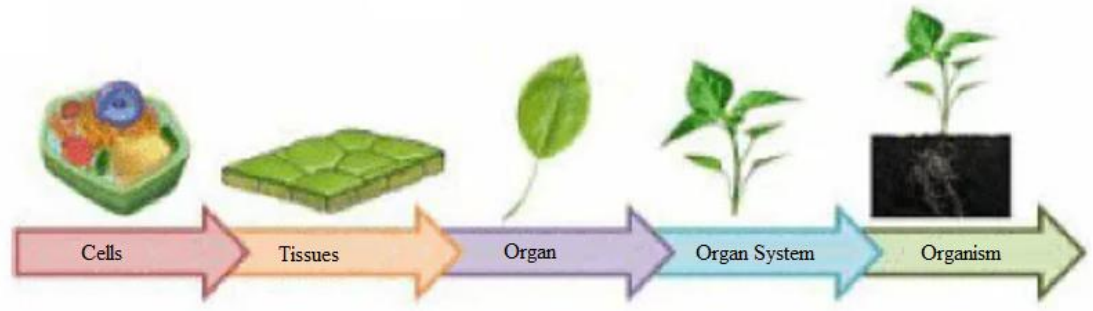
28. (a) Name two organelles that contain their own genetic material?

(b) Mention any two functions of Golgi apparatus.

29. A body of mass 4 kg is dropped from a height of 20 m. Calculate the initial momentum and the momentum just before it strikes the ground. $\left(g = 10 m/s^2\right)$

30. **Read the text carefully and answer the questions:**

A few layers of cells beneath the epidermis are generally simple permanent tissue. Parenchyma is the most common simple permanent tissue. It consists of relatively unspecialized cells with thin cell walls They are living cells. Collenchyma allows bending of various parts of the plant-like tendrils and stems of climbers without breaking. Sclerenchyma tissue makes the plant hard and stiff. We have seen the husk of a coconut. It is made of sclerenchymatous tissue. They are long and narrow as the walls are thickened due to lignin. The tissue is present in stems, around vascular bundles, in the veins of leaves and in the hard covering of seeds and nuts.



(i) The flexibility in plants is due to:

(a) chlorenchyma (b) collenchyma

(c) parenchyma (d) aerenchyma

(ii) Function of aerenchyma:

(a) It helps the aquatic plant to float

(b) It performs photosynthesis

(c) It provides mechanical support

(d) none of these

(iii) Which of the given tissues has dead cells?

(a) Parenchyma

(b) Epithelial tissue

(c) Collenchyma

(d) Sclerenchyma

31. Three student were preparing 50% (mass by volume) solution of sodium hydroxide in VMC lab.

A dissolved 50g of NaOH in 100mL water.

B dissolved 50g of NaOH in 100g of water.

and C dissolved 50g of NaOH in water making 100mL solution.

(i) Which of the following student had made the desired solution.

(ii) Define concentration of solution

(iii) Two components of solution are _____ and _____.

32. Read the following paragraph and choose the correct options to answer any four questions given below: A large bus and a van, both moving with a velocity of magnitude v, have a head-on collision and both the vehicles stop after the collision. The time of the collision is 1 sec.

I. The vehicle, which experiences smaller force of impact is …….

(A) Van **(B)** Bus **(C)** Van and Bus both

(D) There will not be any effect on any of the vehicle

II. The vehicle, which experiences the smaller momentum change is.. ……

(A) Bus **(B)** Van **(C)** Bus and Van both

(D) There will not be any effect on any of the vehicle

III. The vehicle, which experiences the greater acceleration is.....

(A) Bus and Van both **(B)** Bus **(C)** Van

(D) There will not be any effect on any of the vehicle

SECTION-D

33. (a) What are the consequences of the following conditions.
    (i) A cell having higher water concentration than the surrounding medium.
    (ii) A cell having lower water concentration then the surrounding medium.
    (iii) A cell having equal water concentration to its surrounding medium.
    (b) Name the materials of which the cell membrane and cell wall are composed of.
34. The growth of plant occurs only in specific regions:
    (i) Name the tissue which is responsible for this growth.
    (ii) State the different types of this tissue.
    (iii) Write one function of each of the above mentioned tissue.
35. (a) can a homogenous mixture have a variable composition? Justify giving an example.
    (b) What happens when:
    (i) Dilute sulphuric acid is added to a mixture of iron fillings.
    (ii) Dilute sulphuric acid is added to a mixture of iron fillings and sulphur powder heated to red hot, followed by cooling.
36. (a) Distinguish solid and gases on the basis of following parameter
    (i) Fluidity (ii) Diffusion (iii) Volume
    (b) Give two factor that determine the rate of diffusion of a liquid into another liquid.
37. (a) Write the formula to find the magnitude of gravitational force between the Earth and an object on the Earths' surface.
    (b) Derive how does the value of gravitational force 'F change between two objects when the:
    (i) distance between them is reduced to half, and
    (ii) mass of one object is increased four time.
38. (a) State Newton's second Law of Motion. Express it mathematically and find SI unit of force from it.
    (b) In the diagram given above, if the card is flicked away with a jerk, what will you observe? Explain the reason for this observation.